# SYNAPSE TRANSACTION PROCESSING. IT DEALS WITH THE FUTURE YOU CAN'T PREDICT.

# NOTHING ELSE GROWS LIKE IT.

Some businesses become very successful because they can't do enough for their customers.

But when growth means it "can't do enough" literally, a business is hard-pressed to survive without a transaction processing computer.

Then comes the dilemma. Since you can't always predict the future size and nature of your business, what do you buy? A system that's too large, which could be a waste of money? Or a system that's too small, which could force you to waste user time and miss market opportunity? Hmmm. Anybody's guess.

Don't feel bad. Back in 1901, Wilbur Wright said man wouldn't fly for another 50 years. And, just a couple years later, guess what.

Wright was wrong.

But, unlike him, you don't have to guess at all.

Unlike him, you now have an alternative to guessing. The SYNAPSE N+1™ transaction processing system.

It's the first mainframe computer built from microprocessor instruction engines. The first tightly-coupled, multiple-processor transaction processing system. The first system that doesn't achieve fault tolerance at the expense of performance.

So it delivers extraordinary performance.

And it's truly expandable. We call this innovation the SYNAPSE EXPANSION ARCHITECTURE.™

It reduces growth costs because there's no redesign, load-balancing, recompiling or guru-hiring. To accommodate growth, all you do is add more capacity—in only the required and cost-justified increments, all in the original cabinet.

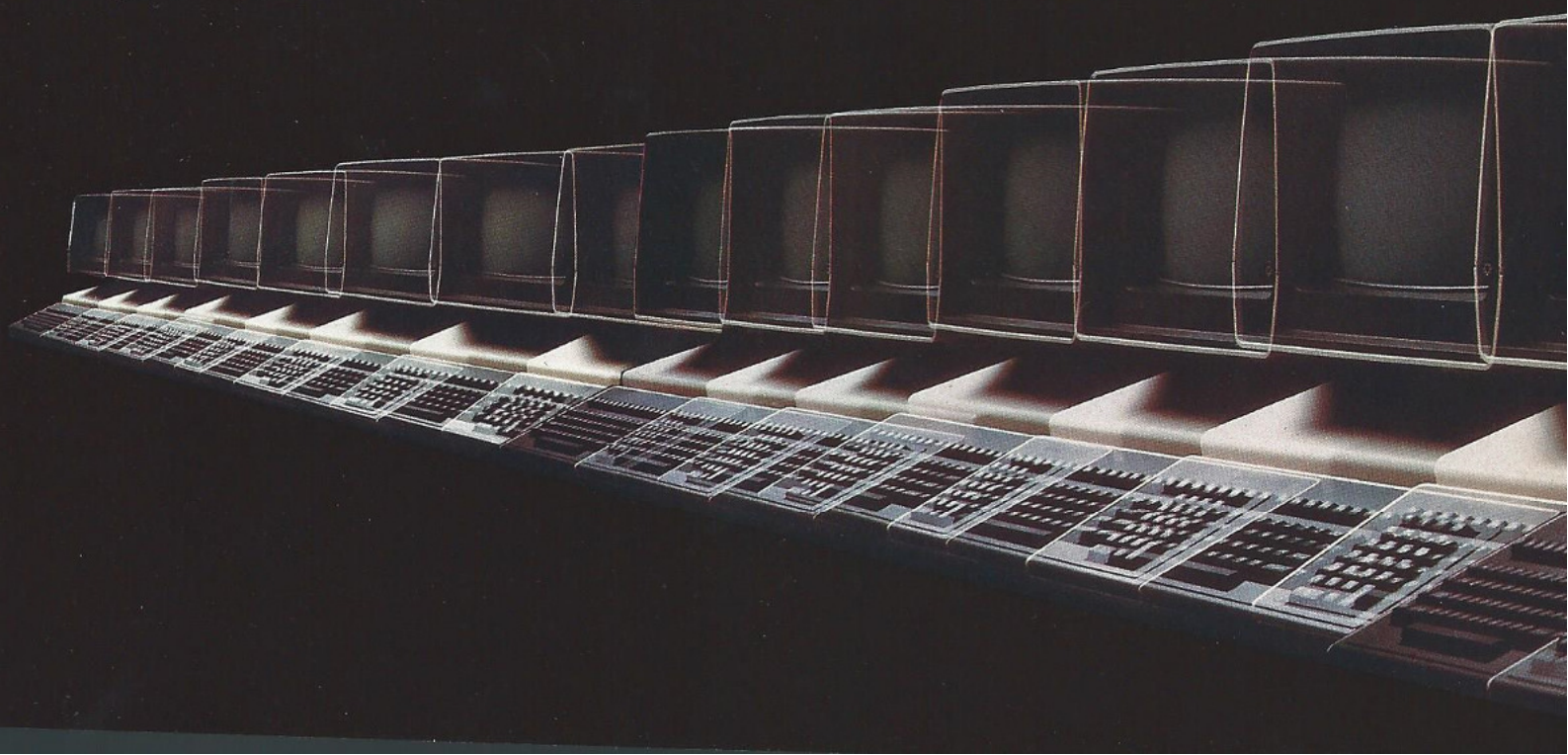
If you need more data base capacity, you can add it. If you need more terminals, you can add them. If you need more computational ability, you can add it.

It works just like an efficient bank lobby. Many processors (bank tellers) with one queue of transactions (customers). Everything flows smoothly and throughput is maximized. The load is balanced automatically across all servers (tellers). To increase throughput, you just add a processor (or teller).

Things just go more quickly.

So your business can grow as rapidly and diversely as the surprises of the marketplace will allow.

And unlike another famous forecaster named Herbert Hoover—who in 1929 said that prosperity was just around the corner—you won't lose your job for guessing wrong.



# AND NOTHING ELSE GOES LIKE IT.

Let's suppose you did everything right. Let's suppose you followed our advice about choosing SYNAPSE N+1—that your business grew in ways you never imagined, and you've expanded the SYNAPSE N+1 system.

Well, in terms of our bank lobby analogy, you'd have a sea of tellers handling transactions, and still no loss of speed or efficiency.

You'd have the largest transaction-oriented mainframe computer available in the world today.

You'd have two-dozen processors and room for more. Each with its special cache that eavesdrops on the bus for memory requests from other processors—and answers them without letting things get bogged down in memories and crosstalk.

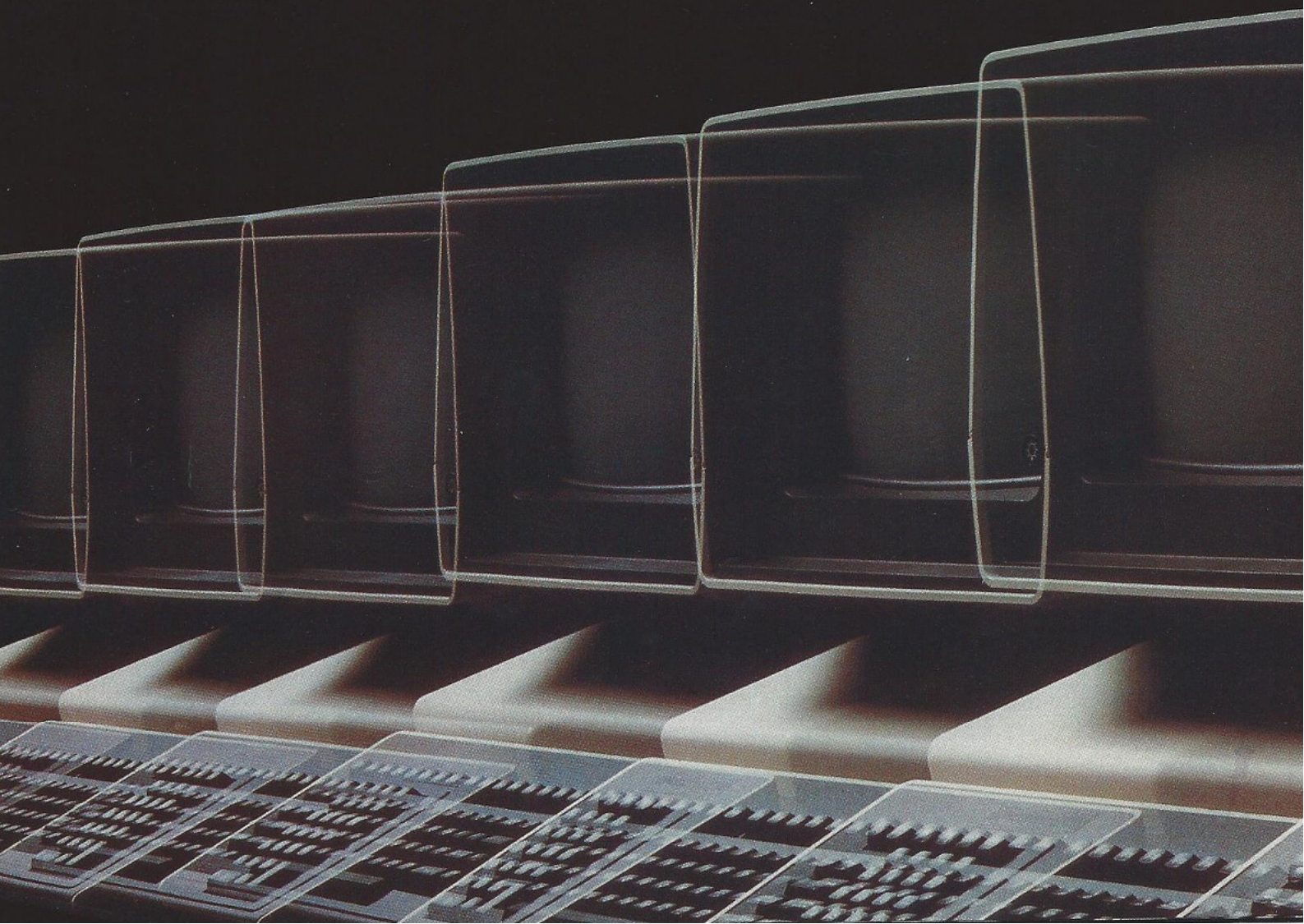
You'd have 16 megabytes of shared memory, plus hundreds of terminals and disks. And all this growth took place on-line, under power, with one unified and integrated software system called SYNTHESIS.™ The name reflects the marriage of operating system, Relational DBMS, transaction processing manager and utilities.

Under SYNTHESIS the work flows and flows and flows, just like that single line for all the tellers in the enlightened bank. With each need serviced by the next available processor.

So what have you got?

A system that's kept you covered, no matter how fast you had to expand.

And an innovation that—well, read on.



# INNOVATION TAKES CARE OF THE DATA AND USERS.

Corporate assets are only as good as the data base that confirms their existence.

But, oh, the things that can happen to a data base.

Fingers can go astray. Computers can crash. And, in the process, data can be corrupted.

Or, out there in the real world, things can happen that the programmers never dreamed of. And, once again, it's trouble.

Or, for that matter, lightning can zap a power company transformer.

Or hardware can fail.

But, if you've glanced at the next page, you already know you don't have to worry about SYNAPSE N+1 hardware failures.

So let's deal with solutions you haven't heard of before.

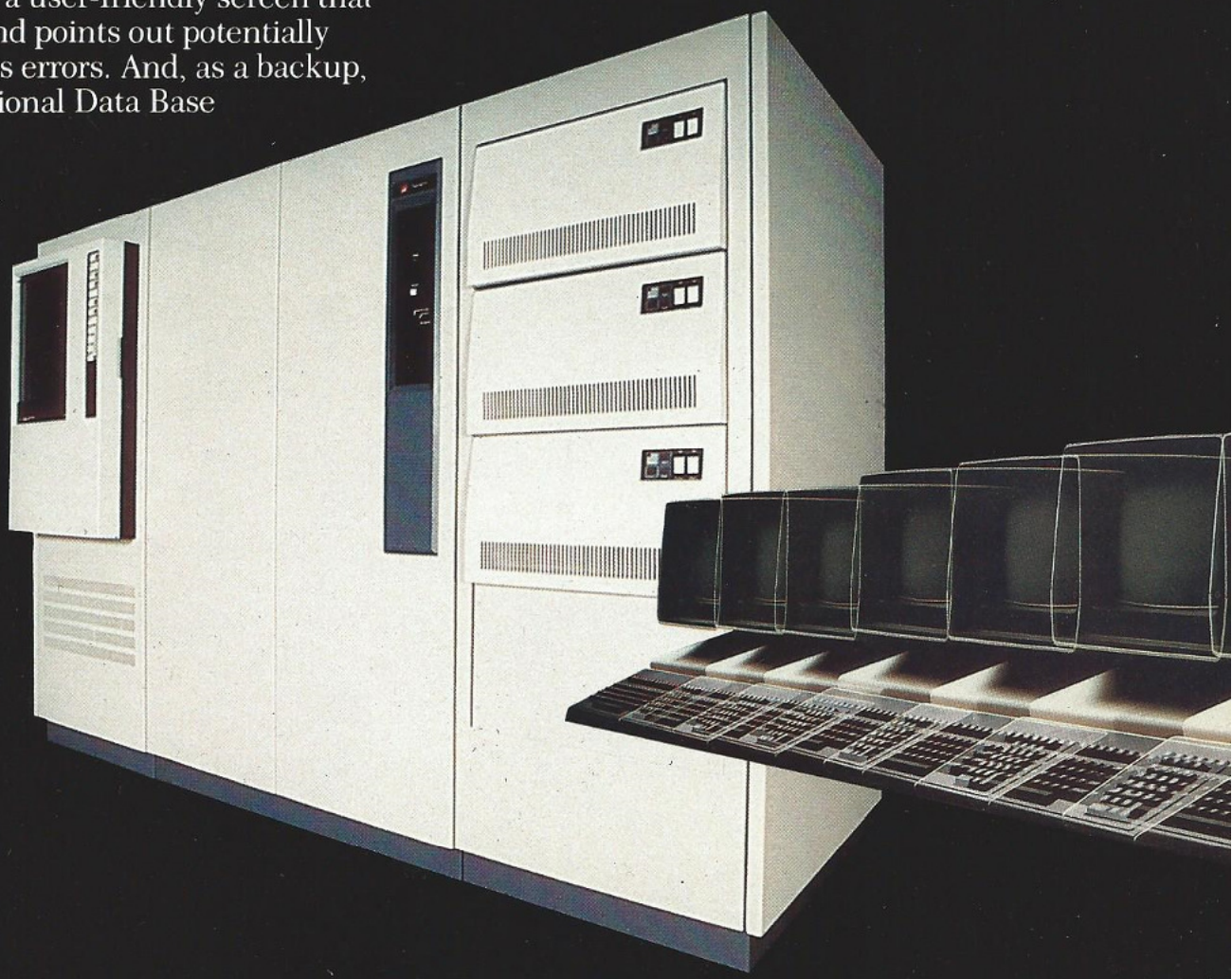
With the SYNAPSE N+1, you have two ways to prevent keyboarding errors from threatening your data. First, the APPLICATION DICTIONARY™ facility results in a user-friendly screen that detects and points out potentially dangerous errors. And, as a backup, the Relational Data Base Management System (DBMS) will refuse to store invalid data.

To help prevent critical flaws in programming, the transaction application model provides ground rules that, along with our Relational DBMS, assure system recovery. The application model, for example, breaks an application into a series of short programs that will automatically restart when a problem is detected. And the DBMS, for example, makes sure that everything needed for system recovery is always on a pair of mirrored disks.

As to the lightning problem, only a standby generator can keep you running during the power failure. But after it's over, SYNTHESIS assures rapid recovery and integrity—of the whole application and for all the users.

Now, let's think about the factor you never have to think about.

Ah yes. The hardware.



# AND THE HARDWARE TAKES CARE OF ITSELF.

Here's a little surprise for most people in the computer business:

*It doesn't take two of every component to overcome fear of things going "Bzzzt" in the cabinet.*

(If that were the case, we would have called our product the SYNAPSE 2N. Instead, we called it SYNAPSE N+1.) Because only one extra of each module-type is required. In addition, if there are N+1 processors, then N of them can fail and not totally ruin your day. And if nothing's failed—the extra one works for a living, augmenting the overall speed and efficiency of the application.

So if a major component fails, the computer simply works around the problem. It reroutes work to the active components. Resulting, at worst, in a slight loss of speed following the failure. But never in a loss of anything else.

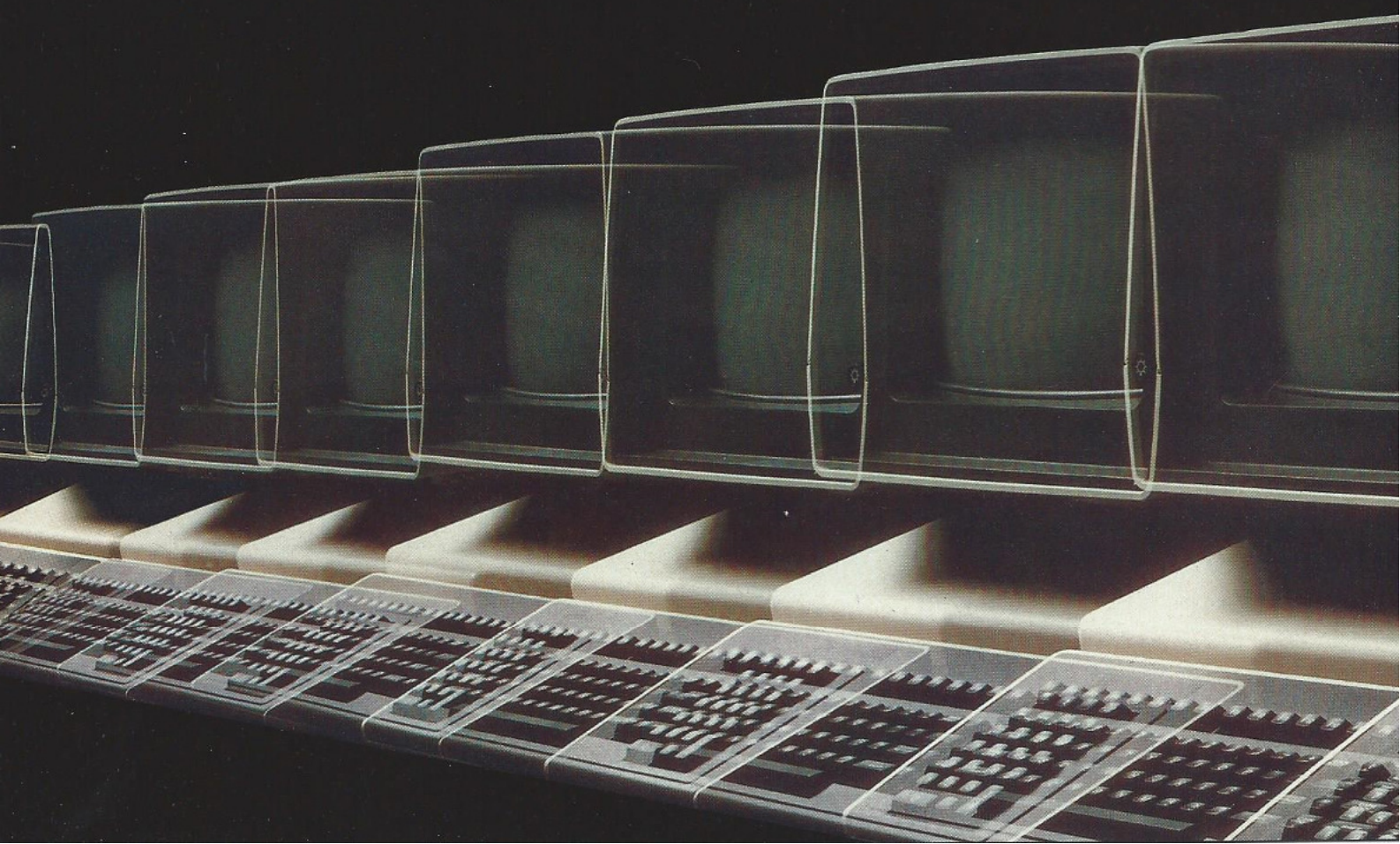
Even if you lose a cooling fan or power supply, you still win. Because the loss won't hurt. And you can replace any system component without turning off the power or taking an application offline.

Now let's talk about the disks. We're not the first to allow protection from media failure through disk drive mirroring. We're just the first to do it sensibly.

Before Synapse, if you spread a critical file over multiple drives for performance reasons, you had to double the number of drives to mirror that file. Synapse allows you to mirror just that file—if it will fit—onto just one drive. N+1 again. (In fact, if the critical files are small enough, we can show you how to save a lot of money with an *N+0* system.)

It's simple enough.

Because simplicity is the whole object.



# FEWER PROBLEMS GETTING ON-LINE.

Since SYNAPSE N+1 automates integrity and recovery, your programmers can concentrate on application issues rather than system issues.

There's no special programming required for fault-tolerant operation. And our integrated Relational Data Base Management System further simplifies programming, letting programmers state *what* data they want instead of *how* to get it.

Complete logical/physical separation in defining the data base allows great flexibility and data independence in the development process. And that, along with an interactive symbolic debugger, vastly improves programmer productivity.

To simplify development even more, the APPLICATION DICTIONARY controls all data base, forms and program definitions. The APPLICATION DICTIONARY is used by all components of SYNTHESIS: Relational DBMS, compilers, forms manager, transaction manager and even the OS. So an "X" can't be typed into a numeric field by an errant finger. And, if a program tries to write an "X" to a numeric field in the data base, it's no dice.

To make sure the application will satisfy its users by "not missing a trick," use of our transaction application model provides a topdown view for implementation. A view that starts with the objective, rather than a group of tasks that may not always achieve it properly. So it literally enforces good management techniques, and the efficiencies they provide. Plus, there's an interactive screen forms editor to eliminate programming forms layouts.

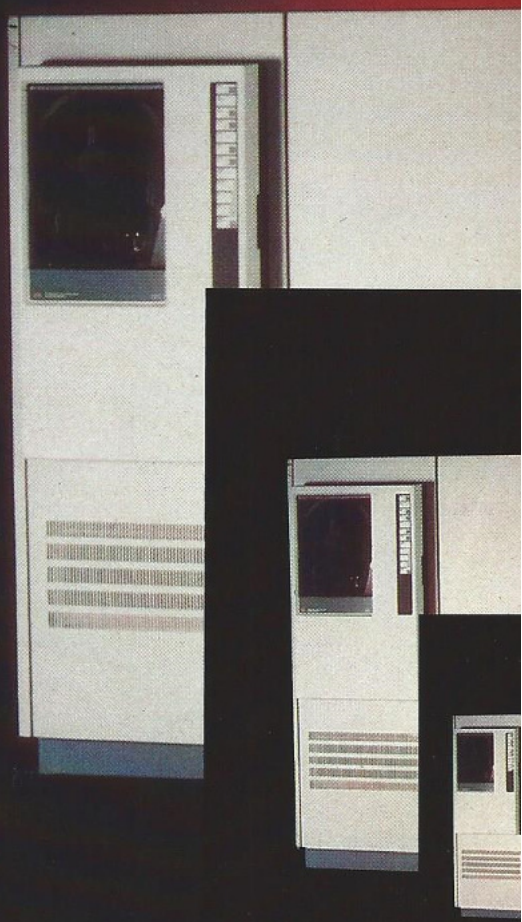
And SYNAPSE N+1 does speak the right languages.

Industry-standard COBOL is available in a powerful debugging version of the compiler, and also in a version that's optimized for production use. PASCAL is also available.

Our application model and APPLICATION DICTIONARY leave little room for programming errors. So, just as the SYNAPSE EXPANSION ARCHITECTURE minimizes risk in a growth situation, all these advantages minimize risk and costs in the development situation.

Even the finest programmers make mistakes.

But with the SYNAPSE N+1, they just have fewer opportunities.



# FEWER HEADACHES ONCE YOU'RE RUNNING.

To keep the users' lives simple, SYNAPSE N+1 provides a fill-in-the-forms operator interface. There are field-by-field error messages. Custom "help" screens available at the touch of a button. And a menu system that makes it easy to progress from one activity to another.

(In fact, users can suspend one activity, perform another, and then resume the first activity exactly where they left off.)

To protect the system and the data, Synapse provides complete access security in two layers: (1) it controls who can log on and when they can log on and which terminals can perform which functions; and (2) it protects individual data base files from use by unauthorized persons or programs.

So if somebody wanted to access, say, the payroll files—the system would require the correct and current user password, *plus* the currently valid payroll-update program code.

To keep all applications available at all times, there are on-line data base backups. To permit maintenance or addition of applications without disturbing what you already have, there's the APPLICATION DICTIONARY. Even the addition of new hardware on-line is non-disruptive.

And SYNAPSE N+1 is thoughtful in other ways, as well. If you change the definition of a field, for instance, the system-wide APPLICATION DICTIONARY will tell you—specifically—which other programs, relational files and forms are affected.

Then, there's the matter of service.

Synapse attaches top-management priority to customer service.

Synapse fault-tolerant system architecture almost precludes the need for emergency responses. But, in the rare event that your system becomes unavailable, our response will be immediate and free of premium contract charges for emergency service.

So, owing to the inherent reliability of the system, we can devote our primary emphasis to customer applications support. Which contributes even further to lower life-cycle costs and an earlier payback on your investment.

And, yes, it all does sound too good to be true.

Unless you consider, again, the plight of Wright.

If he'd really believed in his view of the future, he'd have stayed put in Ohio. Pursuing his bicycle business, seeing nothing more on the horizon than a bicycle built for two.

Luckily, he assumed that anything could happen.

And, now that SYNAPSE N+1 is here, so can you.

# RUN THIS OFF ON YOUR COPIER AND MAIL IT. AND, YES, A SALES REPRESENTATIVE WILL CALL.

**Mail to:**
**Synapse Computer Corporation**
**Corporate Communications Department**
**801 Buckeye Court**
**Milpitas, CA 95035.**

Gentlemen:

Okay, I've seen the brochure. Now I'd like to see a detailed presentation on the SYNAPSE N+1.

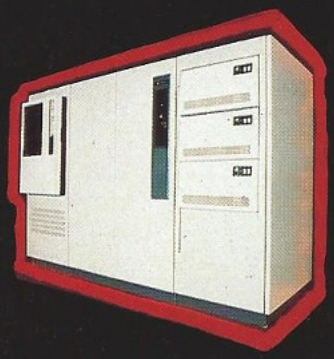
Name: _____

Title: _____ Phone: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____



Synapse
Computer Corporation

**THINK AHEAD.**